

## **REMARKS**

The Examiner's communication dated April 10, 2006 has been received and carefully considered. In conformance with the applicable statutory requirements, this paper constitutes a complete reply and/or a bona fide attempt to advance the application to allowance. Specifically, claims 1-3 and 18-19 have been amended and detailed arguments in support of patentability of all claims have been included. Reexamination and/or reconsideration of the application as amended are respectfully requested.

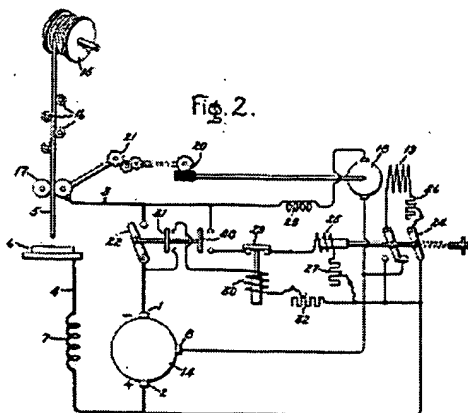
### **Summary of the Office Action**

Claims 1-20 and 22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Noble (U.S. Patent No. 1,508,712).

### **Primary Reference of Record: U.S. Patent No. 1,508,712 to Noble**

The '712 patent relates to electric arc welding systems of the automatic or semiautomatic type wherein the welding arc is maintained between a metallic electrode and the work, and wherein means are "provided adapted automatically and continuously" to feed the electrode and regulate the rate of feed to maintain the arc at substantially constant length. *Noble at page 1, line 8-17*. In particular, it is an object of the '712 patent to provide a regulating arrangement for controlling the speed of the electrode feed motor which will involve the use of no moving contacts or other moving parts to accomplish the necessary changes in the speed of the feed motor while the welding arc is in operation. *Id at page 2, lines 56-62*.

With reference to Figure 2 of the '712 patent (reproduced below), power from a generator 14 is provided to motor armature 18 for driving feed rolls 17 which pull electrode 5 from reel 15 and direct it toward work 6.



The '712 patent specifically states the following:

As is customary the motor is connected to the electrode feed rolls 17 through speed reducing gearing since for successful operation the motor must operate at comparatively high speed while the feed rolls 17 turn approximately three or four revolutions per minute. This speed reducing gearing is represented at 20 and 21, the gearing 21 preferably being arranged so that change-speed gears may be used since the speed at which the electrode is fed must be greater for a small electrode, such for example as 1/16" electrode than for electrodes of 1/8" and larger. By adjusting the steering the motor speed does not need to be changed so greatly for different electrodes and welding occurrence.

*Page 4, lines 58-74.*

An adjustable resistance 26 is provided in the circuit of winding 19 to enable the speed of the electrode feed motor to be adjusted. *Noble at page 4, lines 86-89.* As shown, auxiliary brush 8 of generator 14 is connected to one side of the armature at all times. Main brush 1 is connected to the other side of the armature 18 through switch 22, which is arranged to complete the welding circuit and also to complete the circuit of the motor armature 18. *Noble at page 4, lines 78-81.* Main brush 2 is also continuously in electrical contact with the first side of the armature 18 through the switch 24, field winding 19 and adjustable resistance 26. As is best shown in Figures 3-5 of the '712 patent, however, current from main brush 2 can pass through field winding 19 in one of two directions depending on the positioning of the electrode relative to the work 6.

**The Claims Distinguish Patentably  
Over the Reference(s) of Record**

**Claim 1**, as amended, calls for a switching circuit with an operative condition to connect the second lead of first and second opposite polarity leads receiving power to drive a motor for driving a set of feed rolls to only a selected one of second and third brushes on a commutator to the exclusion of the other one of the second and third brushes. As should be evident from the preceding section concerning the operation of the '712 patent arc welding arrangement, Noble does not disclose a wire feeder, such as called for in claim 1, that includes a switching circuit with an operative condition to connect a second lead to only a selected one of second and third brushes on a commutator to the

exclusion of the other one of the second and third brushes. For at least this reason, Applicant respectfully submits that claim 1 and claims 2-17 dependent therefrom are in condition for allowance.

Dependent **claim 2** calls for the switching circuit of claim 1 to be operated manually. The Examiner indicates that Noble discloses a switch circuit that is operated manually. *Office Action at page 3.* Applicant respectfully disagrees. Rather, Noble discloses a switching circuit that operates according to the positioning of an electrode 5 relative to a work 6. In any case, any switching circuit of Noble fails to connect a second lead of a motor to only a selected one of the second and third brushes on a commutator to the exclusion of the other one of the second and third brushes, as called for in base claim 1.

Dependent **Claim 3** calls for the wire feeder of claim 1 to include a controller with a first output signal causing a switching circuit to select the second brush and a second signal causing the switching circuit to select the third brush. On page 3 of the Office Action, the Examiner indicates that this limitation is found in Noble. Applicant respectfully disagrees and requests the Examiner identify where such teaching is found in Noble.

Dependent **claim 4** calls for the controller output signal of claim 3 to be caused by an input signal indicative of wire size. Again, the Examiner indicates on page 3 of the Office Action that Noble discloses a controller output signal that is caused by an input signal indicative of wire size. Applicant respectfully requests the Examiner identify where this teaching can be found in Noble.

Dependent **claims 5, 6, 7 and 8** call for the wire feeder of claim 1 to include a fixed gear reducer between the motor and the feed rolls. The Examiner indicates that Noble discloses a wire feeder including a fixed ratio gear reducer between the motor and the feed rolls. Applicant respectfully disagrees and directs the Examiner's attention to page 4, lines 65-74 of Noble wherein the '712 patent states that the speed reducing gearing represented at 20 and 21 is preferably arranged so that change-speed gears may be used since the speed at which the electrode is fed must be greater for a small electrode.

Dependent **claims 9, 10 and 11** call for a switching circuit that, when in condition to select the second brush of the commutator, has a time delay for selecting the third brush of the commutator for a time before selecting the second brush. The Examiner indicates that Noble discloses a switching circuit when in the condition to select the second brush has a time delay for selecting the third brush for a time before selecting the second brush.

Applicant respectfully disagrees and requests the Examiner to specifically identify where this alleged teaching occurs in the '712 patent.

**Claim 18**, as amended, calls for a switching circuit that alternately connects a second lead of first and second opposite polarity leads to second and third brushes. A motor is driven from power provided by the commutator at a first speed when the second lead is connected to the second brush and at a second speed when the second lead is connected to the third brush. As already indicated herein, Applicant submits that Noble does not disclose a switching arrangement that **alternately** connects a second lead to second and third brushes. Rather, one lead of the motor armature 18 in Noble is always connected to main brush 1 and the other lead of motor armature 18 is always connected to both second and third brushes 2,8 (i.e., not alternately connected). Accordingly, for at least this reason, Applicant respectfully submits that claim 18 and claims 19-20 dependent therefrom are in condition for allowance.

Dependent **claim 19** calls for a switching circuit of claim 18 to be operated manually. The Examiner indicates that Noble discloses that a switch circuit is operated manually. Applicant respectfully requests the Examiner indicate where in Noble such teaching is found.

Dependent **claim 20** calls for a switching circuit that calls for a circuit to select a second speed for a time to accelerate feed rolls for said time when a switching circuit selects a first speed. Applicant respectfully submits that this limitation is not disclosed nor fairly suggested in the '712 patent.

**Claim 22** calls for a wire feeder for an electric arc welder to comprise a set of feed wheels driven by a DC motor with a commutator. First and second opposite polarity leads receive power to drive the motor and have a first brush at a given position on the commutator and connected to the first lead. A second brush is circumferentially spaced from the first brush an annular distance around the commutator and is connected to the second lead. A device is provided for changing the annular distance to change the speed of the motor driving the feed rolls. Applicant respectfully submits that Noble fails to disclose a device **that changes the annular distance** of a second brush which is circumferentially spaced from a first brush around a commutator for purposes of changing a speed of a motor driving feed rolls of a wire feeder. For at least this reason, Applicant respectfully submits that claim 22 is in condition for allowance.

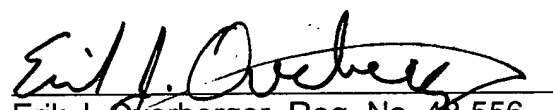
### CONCLUSION

All formal and informal matters having been addressed, it is respectfully submitted that this application is in condition for allowance. It is believed that the claim changes clearly place the application in condition for allowance, defining over any fair teaching attributable to the references of record. Alternatively, if the Examiner is of the view that the application is not in clear condition for allowance, it is requested that the Examiner telephone the undersigned for purposes of conducting a telephone interview to resolve any outstanding differences. Accordingly, an early notice of allowance is earnestly solicited.

Respectfully submitted,

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MINNICH & McKEE, LLP

July 7, 2006  
Date

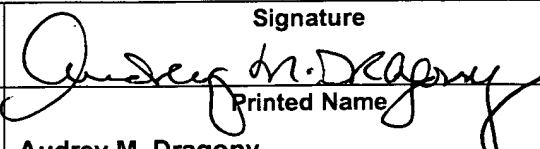
  
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